

Section 2.2 Biological Resources

Data Adequacy Deficiency – Please identify, on the map, the locations of any sensitive species in relation to the proposed project site.

Data Adequacy Response – AFC Figures 8.2-2a, 2b, 2c and 2d (attached) show the locations of sensitive species based on the CNDDB and field surveys conducted by Garcia and Associates (2001) and Davis Environmental Consulting (2000). The legend identifies species that correspond to the map symbols. The figure provided by Garcia and Associates (attached as Figure 2 from their report) shows more detail about the project site, but is the same information as provided in AFC Figure 8.2-2a of the AFC.

Data Adequacy Deficiency – Please identify on the maps the locations of any sensitive species locations that were found during project-related field surveys and any CNDDB sensitive species locations.

Data Adequacy Response – The habitat surrounding the project area is diverse, dominated to the east and south by grasslands, to the north by the Rancho Seco Plant, to the west by vineyards that as recently as 4 years ago were grasslands (see Figure 8.2-1R, attached as replacement for AFC Figure 8.2-1). Vernal pools and swales occur widely in the grasslands with the densest numbers east of Rancho Seco Reservoir. The grasslands between the project site and the Rancho Seco Plant (RSP) support several large wet areas that are described as degraded vernal pools. Woodlands border parts of Rancho Seco Reservoir, the dredge tailing wetlands east of the project and occur as large woodlots near residences approximately 1 mile southwest of the project.

Detailed surveys of the project area included only the 280 acres around the proposed location of the CPP power plant (Garcia and Associates 2001), and did not include areas out to one mile. The description of biological resources within the one-mile area is based primarily on habitat suitability for various species, and on limited biological surveys that were done primarily in support of the Rancho Seco Park Master Plan (SMUD 1994). The detailed map of sensitive species and habitats located within the 280-acre survey area are attached as Figure 2 and Appendix A from the Garcia and Associates report. It shows vernal pools, vernal pool tadpole shrimp, burrowing owl sign, western pond turtle and a loggerhead shrike that were observed during field surveys. Based on information from the CNDDB, habitat suitability and the data in SMUD 1994, we infer that vernal pool fairy shrimp, vernal pool tadpole shrimp, and tiger salamander would occur in vernal pools within one mile of the project site. Similarly Swainson's hawk occur in the region, and although none was seen during field surveys, or reported by Garcia and Associates, they probably occur in the region.

Species that were observed by CH2M HILL biologists, or that would be expected within the one-mile radius, are listed in the following table:

**COSUMNES POWER PLANT
DATA ADEQUACY RESPONSES (01-AFC-19)**

Wildlife Species Observed or Expected within One-Mile of the Cosumnes Power Plant Site

Common Name	Scientific Name	Habitat Association	Observed or Expected?
BIRDS			
American Crow	<i>Corvus corax</i>	Grassland, Residential, Industrial/Paved, Woodland	O
American kestrel	<i>Falco sparverius</i>	Grassland	O
Anna's hummingbird	<i>Calypte anna</i>	Woodlands, Dredge Tailings	O
Barn Swallow	<i>Hirundo rustica</i>	Wetlands	O
Belted Kingfisher	<i>Ceryle alcyon</i>	Wetlands, Dredge Tailings	O
Black phoebe	<i>Sayornis nigricans</i>	Wetlands, Dredge Tailings	O
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	Grasslands	O
Cliff Swallow	<i>Hirundo pyrrhonota</i>	Industrial/Paved, Wetlands	O
European starling	<i>Sturnus vulgaris</i>	Grasslands	O
Great Blue Heron	<i>Ardea herodias</i>	Wetlands, Dredge Tailings	O
Great Egret	<i>Casmerodias albus</i>	Wetlands, Dredge Tailings	E
House finch	<i>Carpodacus mexicanus</i>	Grassland, Industrial/Paved, Residential, Woodlands	O
Loggerhead shrike	<i>Lanius ludovicianus</i>	Grasslands	O
Mallard duck	<i>Anas platyrhynchos</i>	Wetlands	E
Mourning dove	<i>Zenaidura macroura</i>	Grasslands, Industrial/Paved, Residential, Woodlands	O
Northern harrier	<i>Circus cyaneus</i>	Grasslands	O
Northern mockingbird	<i>Mimus polyglottos</i>	Grasslands, Industrial/Paved	O
Pied-billed Grebe	<i>Podilymbus podiceps</i>	Dredge Tailings	E
Red-tailed hawk	<i>Buteo jamaicensis</i>	Grassland, Industrial/Paved, Residential, Woodlands	O
Ring Necked Pheasant	<i>Phasianus colchicus</i>	Grassland	E
Rock dove	<i>Columba livia</i>	Industrial/Paved, Residential	O
Song sparrow	<i>Melospiza melodia</i>	Grasslands	O
Swainson hawk	<i>Buteo Swainsoni</i>	Grassland	E
Turkey vulture	<i>Cathartes aura</i>	Grasslands, Woodlands	O
Western Kingbird	<i>Tyrannus verticalis</i>	Grasslands, Woodlands	O
Western meadowlark	<i>Sturnella neglecta</i>	Grasslands	O
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	Grasslands	O
White-tailed kite	<i>Elanus leucurus</i>	Wetlands, Woodlands	O
Yellow-rumped warbler	<i>Dendroica coronata</i>	Woodlands, Dredge Tailings	O

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Wildlife Species Observed or Expected within One-Mile of the Cosumnes Power Plant Site

Common Name	Scientific Name	Habitat Association	Observed or Expected?
MAMMALS			
Striped Skunk	Mephitis mephitis	Woodland, Grassland	E
Coyote	Canis latrans	Grassland, Industrial/ Paved, Residential	E
California ground squirrel	Spermophilus beecheyi	Grassland, Industrial/Paved, Residential	O
California vole	Microtus californicus	Grasslands	O

Location: Observed

Grassland = Most of the site and surrounding areas, dominated by annual mediterranean grass species

Industrial/Paved = Developed areas of Rancho Seco Plant, and smaller areas developed for former feed lot

Woodland = Small area adjacent to old Dredge tailings and wetlands east of project site, and larger eucalyptus woodlots approximately 1 miles southwest of project site.

Residential = Rural housing, consisting of 5-15 acre lots with associated landscape trees.

Wetlands = Generally seasonal waters, but Rancho Seco Lake and Dredge Tailings are permanent or nearly-permanent ponds.

The aquatic habitat of Rancho Seco Reservoir and adjacent woodlands are attractive to waterfowl and riparian-dependent species. These probably also occur occasionally (although not directly observed) at the wetlands in the dredge tailings east of the project site.

Abundant cliff swallows were seen around the abandoned buildings and cooling towers of the Rancho Seco Plant. Crows, mockingbirds, house sparrows, rock doves and Brewers blackbirds were all observed in this area.

To our knowledge, there are no other recent “on-the-ground” surveys within the 1-mile radius of the project site. The sensitive species that were observed by Garcia and Associates and CH2M HILL are shown on the attached figure. This does not imply that other sensitive species do not occur, but based on habitat suitability we believe we can anticipate which species they are (vernal pool crustacea, tiger salamander, Swainson’s hawk).

Based on the preliminary information and surveys by Garcia and Associates, the plant site was selected as a location where vernal pool species and potential Swainsons’ hawk nests would be avoided. This conclusion is based primarily on habitat suitability.

Data Adequacy Deficiency – Please include a list of the species actually observed at the site.

Data Adequacy Response – Field surveys prepared by Garcia and Associates (2001) and Davis Environmental Consulting (2000) actually included an area larger than the ultimate project site (see Figure 2), but the list of plants provided from that survey is helpful in understanding the vegetative community that exists on and close to the project site (Appendix A from Garcia and Associates’ report is attached).

Similarly, the list of animal species includes species observed in the general area in addition to those observed directly on the project site. With respect to animals, the project site

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comprises heavily grazed annual grassland, with two small swales on it. There is no shade or open water during summer and the grass provides very little cover. As a result, the only mammals observed on the site were California hare, and beechey ground squirrel. There is evidence of abundant vole populations to the west of the old access road, although none was seen. The observations made in the AFC that coyote, and striped skunk would be likely is based on an evaluation of the habitat type and not direct observation.

Similarly, the hot dry grasslands are not conducive to high bird density or diversity. Most birds observed would forage in the grasslands and then fly back toward the trees around the mine tailings or Rancho Seco Park. Birds actually observed on-site comprise western meadowlark, mourning dove, Brewer's and red-winged blackbirds, northern mockingbird, and savannah sparrows. Birds observed in the general area or "flying over" included turkey vulture, great blue heron, American egret, red-tail hawk, American kestrel, northern Harrier, cliff swallow, barn swallow and brown-headed cowbird. The evaluation in the AFC is based on the species that would be expected to occur in this habitat.

Data Adequacy Deficiency – Please provide a discussion of native fish and wildlife species that are of commercial and/or recreational value that could be impacted by the project.

Data Adequacy Response – The District believes that careful design, siting and mitigation will avoid impacts to all native fish and wildlife of commercial and/or recreational value. Species that were considered potentially affected include the recreational fisheries in Rancho Seco Reservoir, the fisheries downstream of the Clay Creek discharge and migratory birds that visit Rancho Seco Park (and support some bird-watching opportunities).

Rancho Seco Reservoir is an artificial water body created to store a backup water supply for the now-decommissioned Rancho Seco Plant. The fisheries of the lake that support recreational uses are primarily trout, which are planted regularly, as well as sunfish and bass, which are also planted. There is no indication that the project would adversely affect these fisheries.

Fish species that live in waters of the Delta, to which Clay Creek discharges, support substantial recreational and some limited commercial value. The most significant recreational and commercial species would be chinook salmon and striped bass, but black bass, catfish, sunfish and sturgeon are also present. The District believes that obtaining and complying with the requirements of an NPDES permit will ensure that water quality discharged to Clay Creek will not adversely affect these species.

Rancho Seco Reservoir supports cottonwood forest, willows, oaks and other trees and water that attract a variety of birds, and consequently an avid community of bird watchers. The proposed project is barely visible from the park, as shown in Figures 8.11-5a & 5b in the AFC, and is not expected to adversely impact this recreational use.

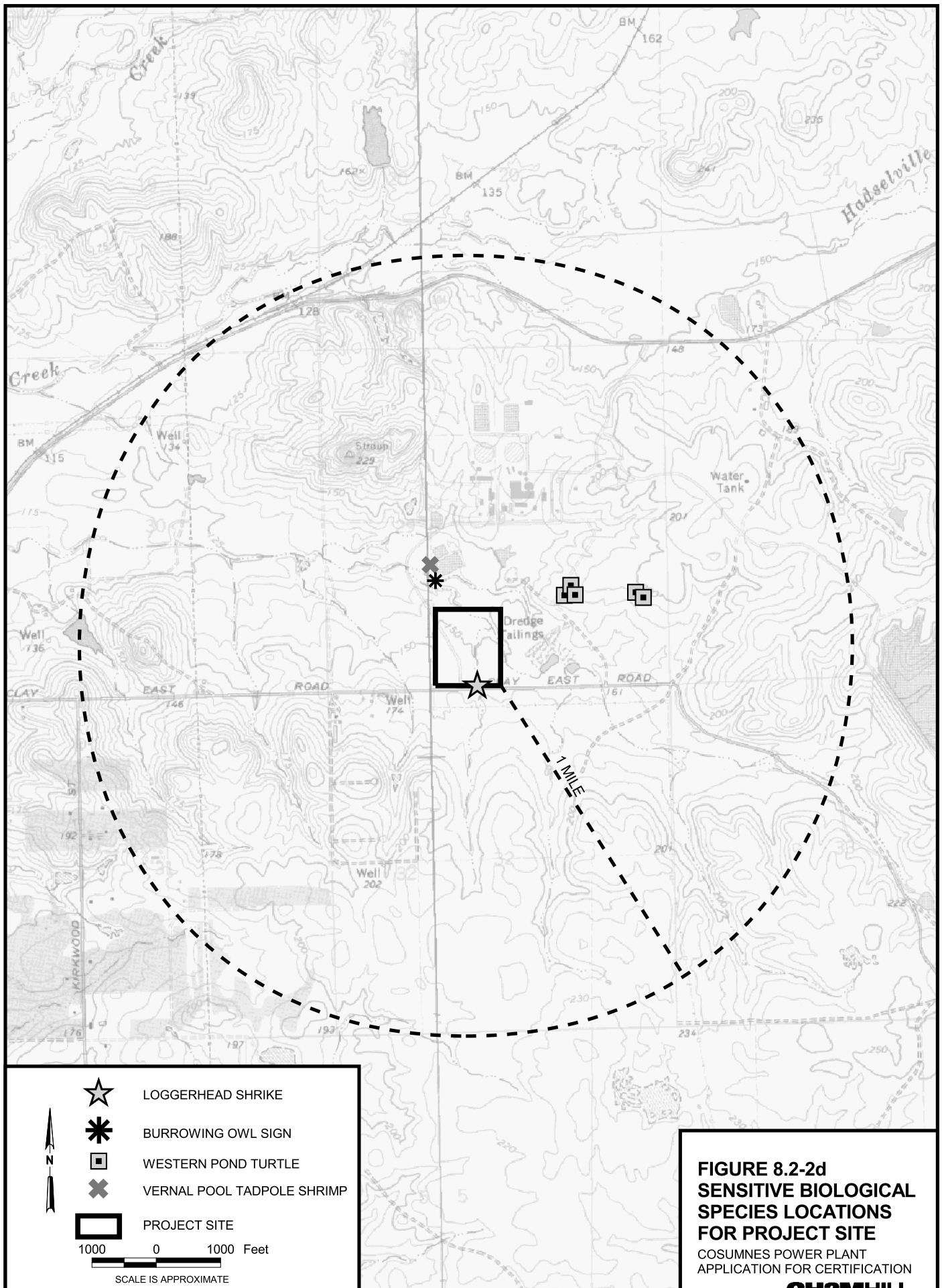
Data Adequacy Deficiency – Please provide additional information on a proposed schedule indicating when permits will be obtained.

Data Adequacy Response – The District is anticipating that there would be no "take" of critical habitat or endangered species resulting from construction of the proposed project, and therefore, does not anticipate any additional state or federal permits at the site. A

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Section 404 permit from ACOE is likely to be required to re-route the drainages on the project site. This would require a related consultation with USFWS under Section 7; however, the District anticipates that there would be no adverse impact to endangered species, and therefore no permit required. This will be determined in consultation with the USFWS after preliminary engineering is completed in approximately December 2001. At that time, it will be known whether all fill of wetlands can be avoided, and whether a Section 7 consultation will be necessary. If required, the Section 7 would be initiated in January 2002, and would be completed in 135 days from submission. If a Section 7 consultation were required, the District would anticipate preparing documentation to satisfy the CDFG 2081 consistency determination concurrently with the Section 7 permit application.

A Streambed Alteration Agreement (CDFG 1601) will be required to re-route the drainages on the project site, and to construct the stream crossings for the gas pipeline. The District has consulted with CDFG regarding the required timeline for these permits and believes that they can be acquired within 90 days after permit application. The application would be submitted after final engineering is completed on these project features, anticipated to be in March 2002. Therefore, as stated in the AFC, we anticipate the Streambed Alteration Agreement and Section 404 permits, if required, to be submitted in April of 2002.



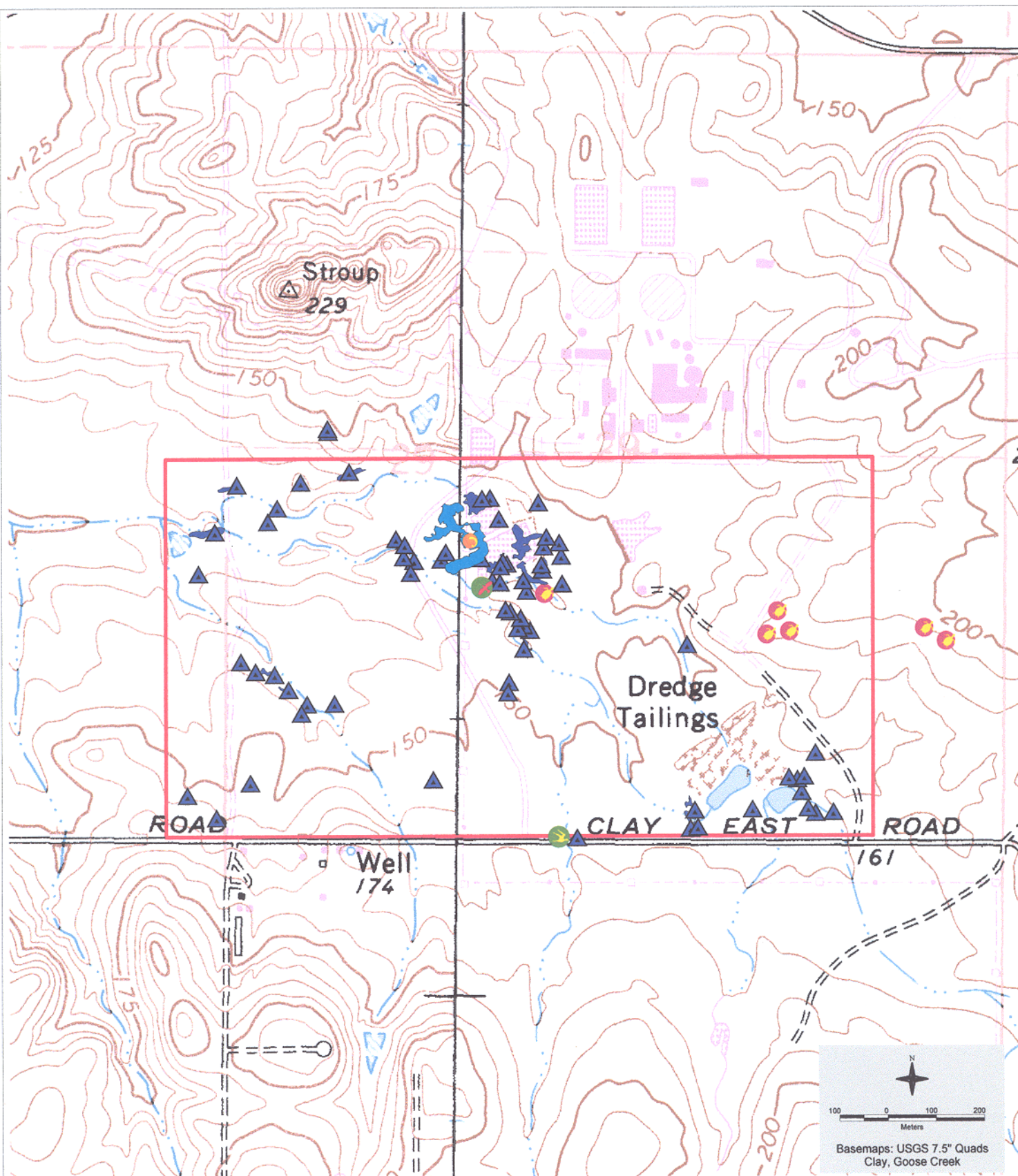




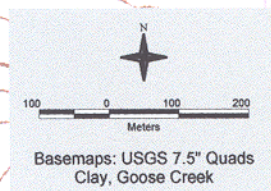
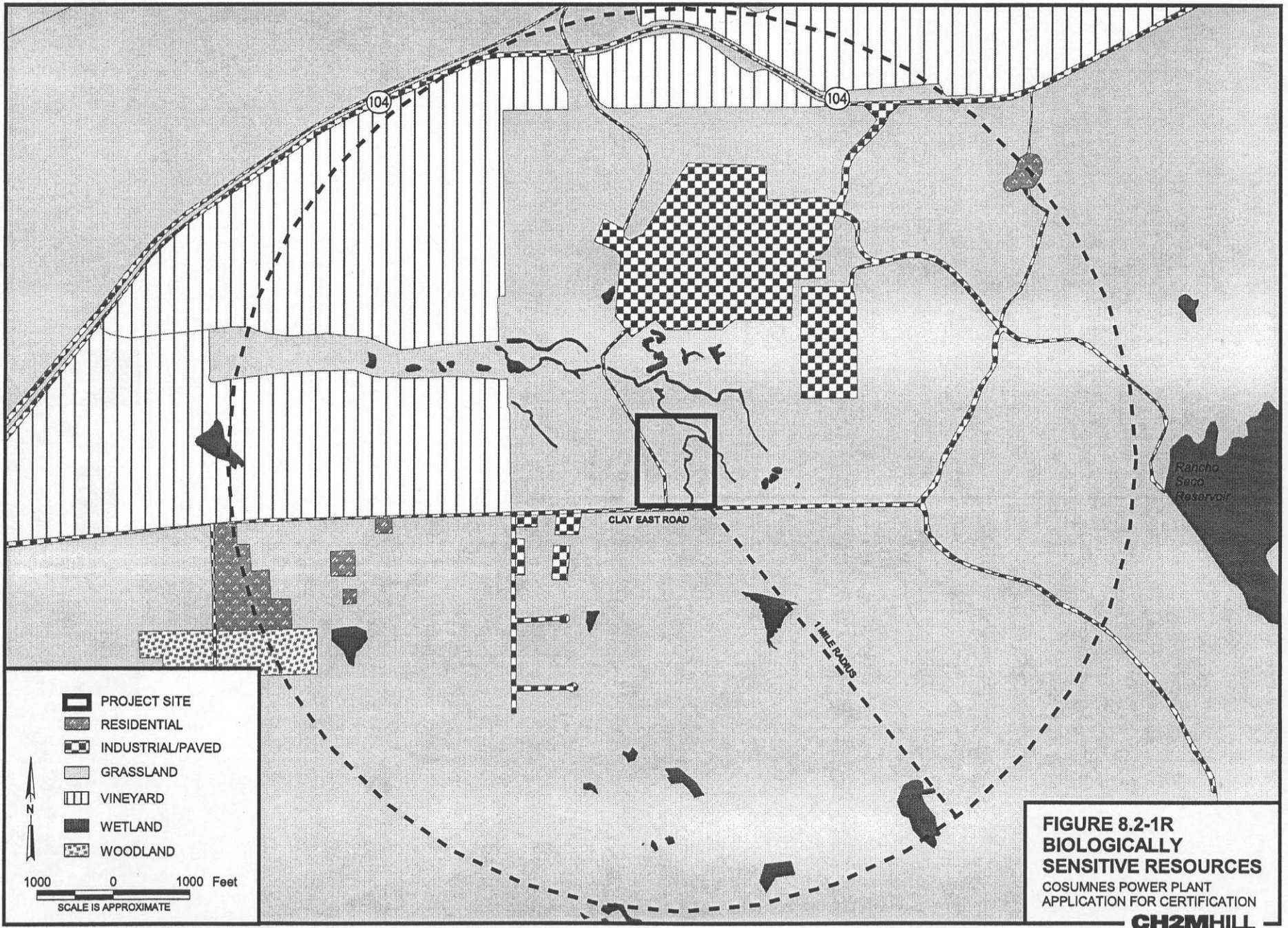


Figure 2.
Survey Area, Locations of Vernal Pools
and Special-Status Wildlife Species
Proposed Twin Cities Power Plant
Sacramento County, CA

-  Vernal Pool Tadpole Shrimp
-  Loggerhead Shrike
-  Burrowing Owl sign
-  Western Pond Turtle

-  Vernal Pool
-  Vernal Pool #29
-  Survey Area





Appendix A. Plants Observed in the Twin Cities Project Area

Family	Scientific Name	Common Name
Alismataceae		
	<i>Alisma plantago-aquatica</i>	water plantain
Apiaceae		
	<i>Eryngium castrense</i>	Great Valley button-celery
	<i>Sanicula bipinnata</i>	Poison sanicle
Asteraceae		
	<i>Carduus pycnocephalus</i>	Italian thistle
	<i>Centaurea solstitialis</i>	yellow star-thistle
	<i>Cotula coronopifolia</i>	brass-buttons
	<i>Filago gallica</i>	Mediterranean herba impia
	<i>Holocarpha virgata</i>	narrow tarplant
	<i>Hypochaeris radicata</i>	rough cat's ear
	<i>Lasthenia fremontii</i>	vernal pool goldfields
	<i>Lasthenia glaberrima</i>	smooth goldfields
	<i>Leontodon taraxicoides</i>	hawkbit
	<i>Micropus californicus</i>	slender cottonweed
	<i>Psilocarphus brevissimus</i>	woolly marbles
	<i>Senecio vulgaris</i>	common groundsel
	<i>Soliva sessilis</i>	common soliva
Boraginaceae		
	<i>Plagiobothrys bracteatus</i>	bracted popcorn flower
	<i>Plagiobothrys greenii</i>	Greene's allocarya
	<i>Plagiobothrys stipitatus</i> var. <i>micranthus</i>	common vernal pool allocarya
Brassicaceae		
	<i>Raphanus sativus</i>	wild radish
Callitrichaceae		
	<i>Callitriche heterophylla</i>	varied-leaved water-starwort
	<i>Callitriche marginata</i>	winged water-starwort
Campanulaceae		
	<i>Downingia bicornuta</i>	bristled downingia
	<i>Downingia ornatissima</i>	horned downingia
Caryophyllaceae		
	<i>Cerastium glomeratum</i>	mouse-ear chickweed
	<i>Minuartia californica</i>	California sandwort
	<i>Silene gallica</i>	windmill pink
	<i>Spergula arvensis</i>	stickwort
Crassulaceae		
	<i>Crassula aquatica</i>	aquatic pygmy-weed
	<i>Crassula tillaea</i>	Mediterranean pygmy-weed
Cyperaceae		
	<i>Cyperus acuminatus</i>	tapertip flatsedge
	<i>Cyperus eragrostis</i>	tall flatsedge
	<i>Eleocharis acicularis</i>	needle spikerush

<i>Eleocharis macrostachya</i>	common spikerush
<i>Eleocharis montevidensis</i>	sand spikerush
Fabaceae	
<i>Lupinus bicolor</i>	miniature lupine
<i>Medicago polymorpha</i>	California burclover
<i>Trifolium depauperatum</i>	dwarf sack clover
<i>Trifolium dubium</i>	shamrock
<i>Trifolium hirtum</i>	rose clover
<i>Trifolium microdon</i>	Valparaiso clover
<i>Trifolium repens</i>	white clover
<i>Trifolium variegatum</i>	variegated clover
<i>Vicia americana</i> var. <i>americana</i>	American vetch
<i>Vicia sativa</i>	spring vetch
Gentianaceae	
<i>Cicendia quadrangularis</i>	Common microseris
Geraniaceae	
<i>Geranium dissectum</i>	cut-leaved geranium
Juncaceae	
<i>Juncus bufonius</i>	toad rush
<i>Juncus capitatus</i>	leafy bracted dwarf rush
<i>Juncus effusus</i>	common bog rush
<i>Juncus tenuis</i>	poverty rush
<i>Juncus uncialis</i>	inch-high dwarf rush
Juncaginaceae	
<i>Lilaea scilloides</i>	flowering quillwort
Lamiaceae	
<i>Pogogyne zizyphoroides</i>	Sacramento mint
Liliaceae	
<i>Brodiaea minor</i>	low brodiaea
<i>Dichelostemma capitatum</i>	blue dicks
Lythraceae	
<i>Lythrum hyssopifolium</i>	hyssop loosestrife
Marsileaceae	
<i>Marsilea oligospora</i>	Nelson's pepperwort
Onagraceae	
<i>Ludwigia peploides</i>	floating water-primrose
Papaveraceae	
<i>Eschscholzia lobbii</i>	frying pans
Plantaginaceae	
<i>Plantago coronopus</i>	cut-leaved plantain
<i>Plantago elongata</i>	long-leaf plantain
Poaceae	
<i>Aira caryophylla</i>	silver hairgrass
<i>Alopecurus saccatus</i>	foxtail
<i>Avena barbata</i>	slender wild oats
<i>Briza minor</i>	little quaking grass
<i>Bromus diandrus</i>	ripgut brome

<i>Bromus hordeaceus</i>	soft chess
<i>Cynodon dactylon</i>	bermuda grass
<i>Deschampsia danthonioides</i>	annual hairgrass
<i>Glyceria occidentalis</i>	western mannagrass
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	foxtail barley
<i>Lolium perenne</i>	English rye-grass
<i>Paspalum dilatatum</i>	dallis grass
<i>Poa annua</i>	annual blue grass
<i>Poa bulbosa</i>	bulbous blue grass
<i>Polypogon monspeliensis</i>	annual beard grass
<i>Taeniatherum caput-medusae</i>	Medusa-head
<i>Vulpia bromoides</i>	brome fescue
<i>Vulpia microstachys</i>	small fescue
<i>Vulpia myuros</i>	rattail fescue
Polemoniaceae	
<i>Navarretia leucocephala</i>	white-headed navarretia
Polygonaceae	
<i>Calandrinia ciliata</i>	red maids
<i>Polygonum persicaria</i>	lady's thumb
<i>Rumex acetosella</i>	common sheep sorrel
<i>Rumex crispus</i>	curly dock
<i>Rumex pulcher</i>	fiddle dock
Portulacaceae	
<i>Montia fontana</i>	water chickweed
Potamogetonaceae	
<i>Potamogeton nodosus</i>	long-leaved pondweed
Ranunculaceae	
<i>Ranunculus aquatilis</i>	whitewater crowfoot
<i>Ranunculus bonariensis</i> var. <i>trisepalus</i>	vernal pool buttercup
<i>Ranunculus muricatus</i>	spiny buttercup
Rubiaceae	
<i>Galium murale</i>	tiny bedstraw
Salicaceae	
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood
<i>Salix gooddingii</i>	Goodding's black willow
Scrophulariaceae	
<i>Castilleja campestris</i> ssp. <i>campestris</i>	yellow owl's clover
<i>Gratiola ebracteata</i>	common hedge-hyssop
<i>Triphysaria eriantha</i>	butter 'n' eggs
<i>Triphysaria pusilla</i>	little owl's clover
<i>Veronica perigrina</i> ssp. <i>xalapensis</i>	Purslane speedwell
Zannichelliaceae	
<i>Zannichellia palustris</i>	horned pondweed